tudes may directly arise from the steady state by a sudden change in the wind, either abatement or turning through an angle of about 90°; also, with a still greater change of angle, under otherwise similar conditions, the amplitude would be much greater, and the origin of the most important seiches ever observed may be explained in this way. Continuous changes of the relative atmospheric pressure between the two ends of the lake may also be the origin of seiches, but with small amplitudes as a rule; the microbarographic disturbances are of still less importance.—*E. W. Woolard.*

LITERATURE CITED

CHRYSTAL, G.
1905. ON THE HYDRODYNAMICAL THEORY OF SEICHES. Trans. Roy. Soc. Edin., vol. 41, pt. III, pp. 599–649. (Includes historical sketch and bibliography of seiches.)

SIMPSON ON THE VELOCITY EQUIVALENTS OF THE BEAUFORT SCALE[1]

551.55

The question of suitable velocity equivalents for the Beaufort scale has been pressing for solution many years. Two solutions have been proposed and fully considered, one by the Deutsche Seewarte,[2] the other by the British Meteorological Office.[3]

Dr. C. G. Simpson after presenting a thorough analysis of both proposals submits a table of equivalents as shown in Table VI below and concludes with the recommendation printed in the closing paragraph below.

TABLE VI.—*Proposed code scale for wind velocity*

Code No.	Limits of velocity		Code No.	Limits of velocity	
	Meters per second	Miles per hour		Meters per second	Miles per hour
0	0–0.5	0–1	6	9.9–12.4	22–27
1	0.6–1.7	2–3	7	12.5–15.2	28–33
2	1.8–3.3	4–7	8	15.3–18.2	34–40
3	3.4–5.2	8–11	9	18.3–21.5	41–48
4	5.3–7.4	12–16	10	21.6–25.1	49–56
5	7.5–9.8	17–21	11	25.2–29.0	57–65

CONCLUSIONS AND RECOMMENDATIONS

(*a*) There is no unique relationship between wind velocity as recorded by anemometers and estimates made on the Beaufort scale.

(*b*) Wind velocities measured by anemometers can be converted into Beaufort numbers only if the equivalent velocities appropriate to the exposure of the anemometer have been previously determined. The Seewarte has determined a satisfactory set of equivalents for anemometers having one type of exposure and the meteorological office another set of equivalents for anemometers with a much freer exposure.

(*c*) It is recommended that when wind velocity is measured by an anemometer the velocity should be reported in weather telegrams by the code set out as Table VI. If this code is used no difficulty will be experienced when the code numbers are plotted on synoptic charts along with Beaufort numbers.—A. J. H.

[1] Air Ministry, Meteorological Office, Professional Notes No. 14.
[2] Koppen: *Aus d. Arch Seewarte*, Hamburg, vol. 21, 1898, No. 5.
[3] Simpson: London, Meteorological Office, Publication No. 180, 1906.

A WISCONSIN TORNADO[1]

W. P. STUART

A tornado first seen in Bayfield County, Wis., within a few miles of Lake Superior at 6.15 p. m. July 16, moved thence in a southeasterly direction and was last seen near Clear Lake, Vilas County, Wis. The length of its path was about 85 miles and its width varied from 300 to 1,760 feet and in places the width of the path of damage was said to have been 6 miles. This extraordinary width seems to have been the width of the path of damaging winds, which may have been straight winds, as they were at Port Wing near the origin of the storm. A funnel cloud was observed at a number of places along the storm's path. Details as to loss of life and property will be found in the table on page 311, this REVIEW.

The tornado passed through the center of the experiment farm at Ashland Junction and was observed by Prof. A. J. Delwiche, of the University of Wisconsin, to whom we are indebted for the following account:

Storm clouds appeared in the west-northwest at 6 or 6.30 p. m. The storm appeared as though it would pass over territory north of here, when in the northwest more clouds collected. Balloon like clouds appeared above, giving the surface a rolling appearance, our first evidence for a possible wind storm. A black layer below moved toward us. Above it the very narrow funnel cloud appeared, a narrow white streak in the black clouds. It was high and had not touched the ground as yet. It was several miles away. The black clouds rolled overhead, then they appeared to move northward, then again south to southwest. The wind began to blow, carrying dust and sand with it. The air was black with dirt and dust. The funnel could be seen coming nearer and nearer in the north-northwest, probably due to the position at which it was viewed, because the path of the funnel passed in a southwest direction.

As the funnel passed its nearest to us the side winds carried everything in its way; the buildings shook from the side winds. Trees were broken in an eastward direction to the north of us, and in a southward direction to the west of us. In the tornado path, 5 miles from here to the northwest, the first destruction took place. The first farmer lost all barn buildings without injury to horses. House was destroyed, tall pine and maple trees were uprooted, broken and twisted about. Next farms, the buildings were taken completely; a timber strip was broken off at heights above the ground of 10 to 20 feet. Farm buildings were wiped out completely as the storm proceeded onward and passed through this section (Ashland Junction), tearing up telephone and telegraph wires, and blocking highways. Then onward to the southwest where two girls were killed, and other homes destroyed for a distance of 5 miles from here. Then the storm did not tear up as many buildings. This is as the storm appeared to us here at the experiment station, and the destruction of the near-by area.

[1] Condensed from the author's report.—*Editor.*

551.578.1

HEAVY RAINS IN VARIOUS PARTS OF THE WORLD

Press reports throughout July carried many references to torrential rains and destructive floods in sundry parts of the world. At best these reports are based on somewhat meager information and deal with the spectacular rather than the scientific aspect of the natural phenomena involved.

NORTH AMERICA

Flood-producing rains fell during the early part of the month in the Mexican States of Sonora, Sinaola, and Nayarit; as a consequence the vegetable crop for export to the United States was cut in half at a loss estimated at $7,500,000.

In the Valley of Mexico extending from about 200 miles north of Mexico City south to the Isthmus of Tehuantepec torrential rains fell almost daily during the early part of the month, causing much damage and suffering. On July 6 it was said:

The greater part of the lowlands of the Valley of Mexico are flooded—something that has not happened in a quarter of a century. From the heights above the town of Tacabaya, south of the capital, the whole Valley of Mexico east to the mountains appears to be a great inland lake. Apparently there has been complete destruction of crops throughout the Mexican Plateau and the loss is estimated at from 10,000,000, to 15,000,000 pesos.

The above is in addition to the loss first enumerated.